

WHAT IS CLAIMED IS:

1. A fuel system, comprising:
a fuel injector configured to receive fuel and to transmit fuel in droplet form;
a reaction region to receive fuel from the fuel injector;
a reaction rod positioned in the reaction region, the reaction rod having a convex end to receive the fuel from the fuel injector, the reaction rod further having a concave end opposite the convex end.
2. The system of claim 1, wherein the reaction region comprises an inner region of a reaction tube.
3. The system of claim 2, wherein the reaction tube comprises a magnetically polarizable material.
4. The system of claim 1, wherein the reaction rod comprises a magnetically polarizable material.
5. The system of claim 4, wherein the material comprises steel.
6. The system of claim 1, further comprising a vacuum generator in communication with the reaction region, the

vacuum generator configured to reduce a pressure of the reaction region with respect to a region exterior to the reaction region.

7. The system of claim 6, wherein the vacuum generator comprises a venturi.

8. The system of claim 6, wherein the vacuum generator comprises a turbopump.

9. The system of claim 1, further including an engine configured to be powered using fuel from the reaction region.

10. The system of claim 9, further including a fuel transport tube positioned between the engine and the reaction region, the fuel transport tube configured to transport fuel from the reaction region to the engine.

11. The system of claim 10, wherein the fuel transport tube comprises a non-magnetic material.

12. The system of claim 11, wherein the non-magnetic material comprises copper.

13. The system of claim 9, further including an exhaust pipe configured to transport exhaust from the engine to an exterior region.

14. The system of claim 13, wherein the reaction region comprises a reaction tube, the reaction tube positioned at least partially within at least a portion of the exhaust pipe.

15. An engine system, comprising:

- a fuel storage region;
- a fuel injector configured to receive fuel from the fuel storage region and to transmit fuel in droplet form;
- a reaction region to receive fuel from the fuel injector;
- and
- a reaction rod positioned in the reaction region, the reaction rod having a convex end to receive the fuel from the fuel injector, the reaction rod further having a concave end opposite the convex end.

16. The system of claim 15, further including an engine in communication with the reaction region.

17. The system of claim 16, wherein the engine includes one or more cylinders.

18. The system of claim 16, wherein the engine comprises an engine selected from the group consisting of a turbine engine, a diesel engine, a steam engine, and a gas engine.

19. The system of claim 17, further comprising a vacuum generator in communication with the reaction region.

20. The system of claim 19, wherein the vacuum generator is selected from the group consisting of a venturi and a vacuum pump.

21. The system of claim 17, wherein the engine system is included in a vehicle.

22. A fuel system, comprising:
a fuel injector configured to receive fuel and to transmit fuel in droplet form;
a reaction region to receive fuel from the fuel injector;
a reaction rod positioned in the reaction region, the reaction rod having a first fuel receiving end and a second end opposite the first fuel receiving end;

a first stop positioned at least partially in the reaction region proximate to the first fuel receiving end of the reaction rod; and

a second stop positioned at least partially in the reaction region proximate to the second end of the reaction rod.

23. The system of claim 22, wherein the first fuel receiving end of the reaction rod has a convex shape.

24. The system of claim 23, wherein the second end of the reaction rod has a concave shape.

25. A method of providing fuel to an engine, comprising:
generating fuel droplets from a fuel source;
transmitting the fuel droplets to a reaction region proximate to a reaction rod;

generating energized fuel by transmitting the fuel droplets past a reaction rod, wherein the reaction rod has a first convex fuel receiving end and a second concave transmitting end; and

transmitting the energized fuel to the engine.

26. The method of claim 25, wherein generating energized fuel comprises electrically transforming the fuel droplets.

27. The method of claim 25, further comprising reducing the pressure in the reaction region.

28. The method of claim 25, wherein the reaction rod comprises a magnetically polarizable material.

29. The method of claim 25, wherein the reaction region is enclosed by a reaction tube.

30. The method of claim 29, wherein the reaction tube comprises a magnetically polarizable material.